

## INTERACTIVE MATHEMATICS PROGRAM<sup>®</sup>

The *Interactive Mathematics Program*<sup>®</sup> (IMP) is an integrated high-school mathematics curriculum designed to challenge students with a four-year sequence of college-preparatory mathematics.

### Problem-Based, Aligned with the Common Core State Standards for Mathematics

- IMP was designed and field tested with support from the National Science Foundation (NSF).
- Units are organized around a real-world problem or theme and the mathematical concepts that students learn grow out of what is needed to solve those problems.
- The CCSSM practices and standards are deeply embedded in the curriculum. IMP is one of three curricula identified as “Exemplary” by the U.S. Department of Education for providing convincing evidence of its effectiveness in multiple schools with diverse populations.

### Students are Active Learners

- Students experiment, investigate, ask questions, make and test conjectures, reflect on their work, and then communicate their ideas and conclusions both orally and in writing.
- The real-life situations capture students’ interest and make mathematics relevant and compelling.
- Problem-based learning helps students develop the ability to transfer their learning and reasoning skills to new problems.
- Students work with each other in collaborative groups as they tackle complex problems.

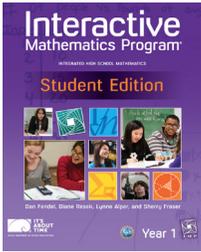
### Total Support for Teachers

- IMP provides the option to choose complete Student Edition or individual units.
- Online Teachers Guide provides complete guidance for each Activity, as well as unit resources such as Pacing Guides, BLM’s, Calculator Guides, Technology Activities and Assessments, Supplemental Activities, and a whole series of additional Activity Notes.
- The CyberPD website provides total support with preparation, just-in-time support, and reflection.
- The CyberPD site includes professional-development videos.
- A professional learning community provides teachers the opportunities to communicate and share with others on an ongoing basis.



## Integrated Pathway and Individual Units

These are the units as they are organized in the integrated sequence. Each of these units is available for purchase as an individual unit book as well.



### YEAR ONE

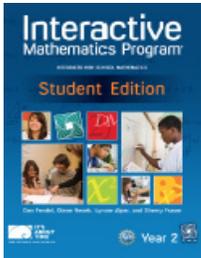
**The Overland Trail**—Variables, Graphs, Linear Functions, and Equations

**The Pit and the Pendulum**—Standard Deviation and Curve Fitting

**Shadows**—Similar Triangles and Proportional Reasoning

**Cookies**—Systems of Equations and Linear Programming

**All About Alice**—Exponents and Logarithms



### YEAR TWO

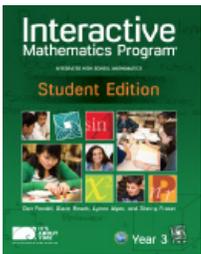
**Fireworks**—Quadratic Functions, Graphs, and Equations

**Geometry By Design**—Transformations, Construction, and Proof

**The Game of Pig**

**Do Bees Build it Best?** — Area, Volume, and the Pythagorean Theorem

**Small World, Isn't It?**



### YEAR THREE

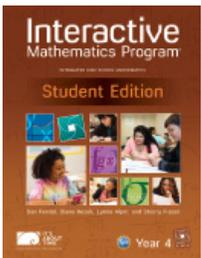
**Pennant Fever** — Permutations, Combinations, and The Binomial Distribution

**Orchard Hideout** — Circles and Coordinate Geometry

**High Dive** — Circular Functions and the Physics of Falling Objects

**The World of Functions** — Families of Functions and the Algebra of Functions

**Is There Really A Difference?** — The Chi-Square Test and the Null Hypothesis



### YEAR FOUR

**Meadows or Malls?** — Three-Variable Equations, Three-Dimensional Coordinates, and Matrix Algebra

**How Much? How Fast?** — Accumulated Change, Rates of Growth, and the Fundamental Theorem of Calculus

**The Pollster's Dilemma** — The Binomial Distribution and the Central Limit Theorem

**As the Cube Turns**—Programming and Transformational Geometry

**Know How**—Self-Directed Learning

"I would say that IMP is the best high-school curriculum that I know of that really takes the problem-solving approach. I love the idea of giving students a big problem that they can't solve and then having them work towards the solution. In all the IMP classes we worked in, watched, and researched, we found great engagement in mathematical thinking and work. I am a big fan!"

- Jo Boaler, Professor of Mathematics Education at the Stanford Graduate School of Education

